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COMMITTEE ON SUSTAINABLE ENERGY

Ad Hoc Group of Experts on Cleaner Electricity
Production from Coal and other Fossil Fuels

Third session
Geneva, 14 May 2009

**REPORT OF THE AD HOC GROUP OF EXPERTS ON CLEANER ELECTRICITY
PRODUCTION FROM COAL AND OTHER FOSSIL FUELS
ON ITS THIRD MEETING**

I. ATTENDANCE

1. The third session of the Ad Hoc Group of Experts on Cleaner Electricity Production from Coal and other Fossil Fuels was held on 14 May 2009. Additional background papers and detail on the items summarized in the report are available on the ECE website at:
[http://www.unece.org/energy/se/docs/clep_Ad Hoc Group of Experts 3.html](http://www.unece.org/energy/se/docs/clep_Ad%20Hoc%20Group%20of%20Experts%203.html).
2. The meeting was attended by representatives of Italy, Kazakhstan, Poland, United Kingdom of Great Britain and Northern Ireland, United States of America and Ukraine.
3. Representatives of the European Commission and the International Energy Agency were also present.

II. ADOPTION OF THE AGENDA (Agenda item 1)

Documentation: ECE/ENERGY/GE.5/2009/1

4. The agenda was adopted without amendment.

III. ELECTION OF OFFICERS (Agenda item 2)

5. The Ad Hoc Group of Experts elected a new vice-chairman to serve for 2009-2010. The officers are: Mr. B. Terzic (United States of America), Chairman; Ms. R. Hampton (United Kingdom), Mr. V. Budinsky (Czech Republic), Ms. M. Ersoy (Turkey), Mr. S. Shumkov (Russian Federation) and Mr. B. Gryadushchyy (Ukraine), Vice-Chairmen.

IV. ACTIVITIES AND PRIORITIES OF THE COMMITTEE ON SUSTAINABLE ENERGY AND ANY MATTERS FOR CONSIDERATION BY THE AD HOC GROUP OF EXPERTS (Agenda item 3)

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6. The Director of the Sustainable Energy Division, Mr. Fred Romig, opened the meeting and welcomed participants.

7. The Director underlined that a Forum on carbon capture and storage (CCS), held in November 2008 during the seventeenth session of the Committee on Sustainable Energy, addressed the current state of CCS technology and market developments, the launch of the CCS Regulator's Network and ways of financing CCS projects. The Forum also discussed the deployment of CCS in Europe and North America as well as CCS awareness and readiness in the emerging economies of the ECE region, and the contribution of CCS to energy security and sustainable development. The Forum confirmed, he said, that there was a vital need for the development of cleaner electricity production from coal and other fossil fuels to balance the expected demand and supply electricity scenarios.

8. He recalled that the Ad Hoc Group of Experts represented a major forum of participants from government, the energy industry and non-governmental organizations with a unique mandate to foster investment in cleaner electricity production from coal and other fossil fuels. In addition, the Ad Hoc Group of Experts recently implemented technical assistance projects such as on Enhancing investment in advanced fossil fuel technologies for climate change mitigation and sustainable development in countries with economies in transition, for the biennium 2010-2011, which has been shortlisted for Development Account funding in 2009.

9. Based on its extensive work in 2007-2009, the Bureau of the Ad Hoc Group of Experts and other delegations believed that the launch of additional activities focusing on the creation of a suitable regulatory framework for clean electricity production through the establishment of an ECE trust fund was critical to the success of the effort. The Director also underlined that the Bureau and other delegations felt it was the appropriate time to launch the United Nations trust fund on fostering investments in cleaner electricity production from coal and other fossil fuels in the ECE region, which was initially approved in 2007.

10. He encouraged the Ad Hoc Group of Experts to continue its efforts to promote investments in cleaner electricity production from coal and other fossil fuels.

V. OPENING REMARKS FROM THE CHAIR (Agenda item 4)

11. The Chairman underlined that the current international economic downturn provided a short window of opportunity to address problems of new electricity supply from cleaner sources.

This was due to a down turn in electric demand in many countries providing some additional time before new electricity generation capacity needed to be brought into service. However, he cautioned that demand for electricity was certain to increase as global economies improved and customers returned to previous trends in electricity usage. Thus the need for new clean fossil fuel technologies continues and the work of the Ad Hoc Group of Experts was needed and would add progress in this vital area.

VI. REVIEW OF THE PROGRAMME OF WORK FOR 2009/2010 (Agenda item 5)

12. The Ad Hoc Group of Experts will continue or consider developing the following activities in 2009-2010:

(a) Analysis: Review the prospects for cleaner electricity production from fossil fuels and the flow of investments in the industry with an emphasis on measures and incentives, which would promote investment in cleaner electricity production. The analysis would include the evaluation of reserve margins across the ECE region and a comparison of related policies and regulations.

(b) Electricity trade assessment: Determine regulatory prerequisites for the promotion of investment in cleaner electricity production from fossil fuels through the exploration of long-distance east-west electricity trade opportunities and interconnection capacities.

(c) Business strategies: Appraise the comparative advantages of investments in new capacities, plant and end-use efficiency, structural adjustment of fuel use and reliance on carbon capture and storage (CCS) technologies.

(d) Innovation: Survey CCS awareness and readiness particularly in the emerging economies of the ECE region; assist in the development of compatible regulatory frameworks.

(e) Policy guidelines: Foster the creation of an ECE-wide consensus on enhancing investments in thermal generation and in transmission and related infrastructure, in particular cross-border transfer capacities and procedures.

(f) Norms: Begin work on developing ECE-wide guidelines for measuring capacity adequacy in generation and transmission as well as on enhancing transparency of cross border transmission.

VII. TRUST FUND (Agenda item 6)

13. The second session of the Ad Hoc Group of Experts in November 2008 confirmed its decision to establish a trust fund on fostering investments in cleaner electricity production from fossil fuels in the ECE region, with the support of a number of major companies and Governments which agreed to take an active role in shaping its focus and assisting in raising required funds.

14. The secretariat presented the first draft of the trust fund on fostering investment in cleaner electricity production from fossil fuels in the ECE region for discussion (Annex).

15. The terms of reference for the trust fund, in the form of an informal document, were adopted by the Ad Hoc Group of Experts. The secretariat was requested to issue them as an official document.

16. Cooperation with other intergovernmental and non-governmental organizations is expected to speed progress during the early stages of the project (specifically activity A1). In addition to their regular sessions, the Ad Hoc Group of Experts will consider organizing one or two workshops in 2009-2010 focusing on delivering the project's outputs which would have a tangible impact on promotion of investments in cleaner electricity production (supporting activities A2, A3 and A6).

VIII. OTHER BUSINESS (Agenda item 7)

17. The fourth session of the Ad Hoc Group of Experts will take place on 16-17 November 2009.

18. The meeting requested the secretariat to issue in future as official documents in the three ECE working languages all relevant documents for its work such as agendas, reports, programme of work, calendar for its meetings, questionnaires, terms of reference, progress reports and final reports of its ongoing activities, studies and surveys as well as any other documents deemed important for the work of the Ad Hoc Group of Experts, including all those considered during the third session. In case of need, the secretariat should remain in close contact with the Bureau of the Ad Hoc Group of Experts on this key matter.

IX. ADOPTION OF THE REPORT (Agenda item 8)

19. The report of the meeting was adopted.

ANNEX

TERMS OF REFERENCE FOR THE TRUST FUND ON FOSTERING INVESTMENT IN CLEANER ELECTRICITY PRODUCTION FROM FOSSIL FUELS IN THE ECE REGION.

(\$1,003,000 for three-year programme)

I. Background

1. Apart from the transport sector, electricity dominates final energy consumption in the ECE region. With fossil fuel-based power plants producing most of the electricity, their increased efficiency and reduction or elimination of CO₂ emissions rank high on the agenda of governments and corporate sector.
2. In this framework, the European Union (EU) target for CO₂ emission reduction of 50 per cent by 2050 will not be possible to achieve with energy efficiency and the use of renewable energy alone. The area of fossil fuels has to be tackled as well. For example, about one third of the existing EU coal-fired power capacity will be replaced within the next 10 years, according to the European Commission, which would provide an opportunity for the introduction of low or no-emission fossil fuel-based electricity generation. Kyoto Protocol and EU commitments envisage a target reduction of at least 20 per cent in greenhouse gases by 2020. Other ECE countries are considering similar CO₂ reduction goals.
3. Electricity producers would therefore have to undertake massive investments in clean coal and other fossil fuel technologies for power generation to meet the anticipated conditions in the carbon market in the ECE region. Demand for climate-friendly electricity generation and the replacement of ageing conventional generation facilities would complement each other.
4. In this respect, the ECE Forum on Carbon Capture and Storage (CCS), held in November 2008 confirmed that there continues to be a necessity for the emergence of an ECE-wide economy based on lower and, in the long-term, zero CO₂ emissions. In that framework, there is a vital need for the development of cleaner electricity production from coal and other fossil fuels to balance expected demand and supply electricity scenarios with dramatically reduced CO₂ emissions.
5. The presentations made at the Forum on possible CCS regulation and CCS technology implementation, as well as on the CO₂ market formation and development, illustrated that numerous challenges remain to be resolved to make possible CO₂-free fossil-fuels based electricity production.
6. The Ad Hoc Group of Experts represents a major forum of governmental, energy industry and non-governmental organization participants with a unique mandate to foster investment in cleaner electricity production from coal and other fossil fuels. In addition to its annual sessions and meetings, the Ad Hoc Group of Experts also has the capacity to implement technical assistance projects such as on enhancing investment in advanced fossil fuel technologies for climate change mitigation and sustainable development in countries with economies in transition, for the biennium 2010-2011, which has been shortlisted for Development Account

funding in 2009 (see also below the section on Project Co-financing and Parallel Financing Contributions).

7. Based on its extensive work in 2007-2009, the Ad Hoc Group of Experts believes that the launch of additional activities focusing on the creation of a suitable regulatory framework for clean electricity production through the establishment of an ECE trust fund is crucial for the success of the effort, and that this is an appropriate time to launch the Trust Fund on fostering investments in cleaner electricity production from coal and other fossil fuels, initially approved in 2007.

8. At the 2008 Forum the Ad Hoc Group of Experts noted with the appreciation the interest of the delegations of, among others, the European Union, United States of America, Siemens, Enel, Vattenfall, CCII (China) and Kazakhstan in taking an active part in the process.

II. Goals of the trust fund

9. The funds channelled to the proposed ECE trust fund will be used for the following purposes:

(a) To design an alternative model regulatory system(s) or regulatory practices and incentive mechanisms which would foster investments in cleaner electricity production from coal and other fossil fuels in the ECE region.

(b) Based on inputs from industries and governments, to design a process on how to move from current regulatory systems and practices to those more likely to achieve the desired goals of cleaner electricity production.

(c) To enhance the ability of ECE Governments to attract domestic investments and foreign direct investment into advanced fossil fuels technologies for electricity production to support energy security and low-carbon sustainable development.

III. Expected accomplishments of the trust fund financed activities

10. The expected accomplishments of the trust fund financed activities will be the following:

(a) Increased regulatory skills to develop and maintain an attractive investment climate to encourage investment in the power sector to meet the growing demand for clean electricity from fossil fuels and climate change goals in the ECE region, in particular in countries with economies in transition.

(b) Improved cooperative relationships and information exchange mechanisms between energy policymakers in the ECE region and investors in clean electricity production from fossil fuels.

(c) Possible development of pre-feasibility studies for pilot or advanced projects in selected countries.

IV. Indicators of achievement

11. The indicators of achievement will be the following:

(a) Production of a comprehensive regulatory framework(s) (systems or practices) or incentive mechanism which would foster investment in clean electricity production from fossil fuels including carbon capture and sequestration (or recycling of carbon).

(b) Increased number of regional and national officials able to design and implement effective legal/regulatory frameworks supporting the desired investments.

(c) Established network of government officials in the ECE region, in particular in countries with economies in transition, and of the investment community, to encourage investment in advanced fossil fuel technologies from clean electricity production.

(d) Developed samples of pre-feasibility studies for advanced coal-based power projects in selected countries for the consideration of investors.

V. Main activities

12. The main activities of the project will include:

A1: With the assistance of industry and ECE Governments, to develop a comparative analysis for each targeted country with regard to electric power supply infrastructure, status of introduction of advanced energy technologies for new facilities or retrofit on existing facilities, estimates of required related domestic and foreign investment, evaluation of current programmes and policies in place to seek and encourage investment, and recommended means of cooperation among participating countries.

A2: Develop and carry out workshops within the region to allow for networking among officials in the region to exchange ideas and to discuss: (i) the offered regulatory framework(s) and comparative analysis, (ii) mechanism of fostering investment in advanced clean power technologies, and to initiate (iii) work with officials in each interested country to identify required changes to existing policy, legal and regulatory frameworks leading to a friendlier investment climate.

A3: Deliver one or more broad-based technical training workshops in the region on technical and policy options for cleaner electricity production.

A4: Provide technical assistance to interested ECE member States in formulating policies intended to create a strong and encouraging investment framework for advanced power fossil fuel-based technologies.

A5: Provide technical assistance to national experts to develop pre-feasibility studies on advanced clean power projects in selected countries.

A6: In cooperation with government officials and corporate executives from the region, planning and execution of two major conferences, one in Western Europe

or in the United States, the other in the East European/Central Asian region with the intended objective of bringing together officials from the region along with major domestic and foreign investors to encourage greater investment flows into the clean power sector including in countries with economies in transition.

VI. Relationship to the Strategic Framework for the period 2010- 2011 and the Millennium Development Goals (MDG)

13. The project will be executed in relation to:

(a) **ECE Strategic Framework 2010-2011** Subprogramme 5: Sustainable energy; Expected (a) Progress in the international dialogue between Governments and industry on sustainable energy development issues, in particular cleaner energy production, energy security and diversification of energy sources.

(b) **Millennium Development Goal 7:** Ensure environmental sustainability.

(c) **Millennium Development Goal Target 9:** Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources.

(d) **Millennium Development Goal Indicator 28:** Carbon dioxide emissions (per capita).

VII. Detailed Description for Each Budget Line

14. Consultants (\$410,000)

(a) International consultants

International consultants for development of the comprehensive “benchmark” regulatory framework and comparative analysis, for delivery of effective training modules at workshops and conferences, and providing other technical assistance in support of activities A1, A2, A3, A4, A5, A6. (4 work months) x (\$20,000 per month) + (\$30,000 for consultants travel) = **\$110,000**

(b) National / regional consultants

National consultants for tasks of conducting primary research and contributing to comparative analysis, delivery of training workshops and conferences in cooperation with international consultants, and support of country-specific activities. A1, A2, A3, A4, A5 and A6. (4 work months) x (\$15,000 per month) x (5 countries) = **\$300,000**

15. Travel of staff (\$60,000)

(Ten ECE missions x 1 staff member per mission) by international United Nations staff for the purpose of kick-off meeting, conducting workshops and conferences, in support of

activities, and technical assistance in policy development A1, A3, A4, A5 and A6.
(\$6,000 average mission cost) x (10 missions) = **\$60,000**

16. Seminars and Workshops (\$220,000)

(a) Workshops

(Four regional workshops) in the ECE region in support of A2 and A3. (\$1,500 per participant) x (20 participants) x (4 workshops) = **\$120,000.**

(b) Seminar

Two conferences in support of A6. (\$1,000 per participant x 100 participants) = **\$100,000.**

17. Contractual services (\$250,000)

Contracts

Five contracts will be awarded to the teams of international experts and/or national entities to undertake a comprehensive pre-feasibility study on advanced power generation fossil fuel-based in support of activity A5. (\$50,000) x (5 countries) = **\$250,000**

18. Operating expenses (\$33,000)

(a) Communications

In support of A1, A2, A3, A4, A5 and A6 = **\$10,000.**

(b) Supplies

In support of A1, A2, A3, A4, A5 and A6. = **\$23,000.**

19. Programme Evaluation (\$30,000)

Roughly 3 per cent of 973,000 = **\$30,000**

Total Funds Required (\$1'003'000)

20. Project co-financing and parallel financing contributions:

(a) Co-financing for the project will be explored with the supporting institutions of government departments, international organizations and public and private sector companies currently financing ECE projects on energy security and energy efficiency.

(b) Parallel financing has already been requested for the complementary project "Enhancing investment in advanced fossil fuel technologies for climate change mitigation and sustainable development in countries with economies in transition" (\$632,000 for the 2010-2011 biennium) which has been shortlisted for Development Account funding in 2009.
